CLAIMS

1/ A method of monitoring the proportion of a component in a gaseous mixture having at least two components and contained in an electrical switchgear enclosure, said method consisting in measuring the pressure, the temperature, and the density of the gas mixture by means of sensors mounted on said enclosure, and in determining said proportion by processing the measured values in a data-processing unit, so as to enable the mixture to be monitored non-intrusively.

2/ A method according to claim 1, in which said proportion of a component in the mixture is calculated by the data-processing unit which is programmed to solve the thermodynamic state equations of said components.

3/ A method according to claim 1, in which said proportion of a component in the mixture is determined by the data-processing unit which stores a data table in a memory, said data table containing a plurality of data items representative of various proportions of said component in correspondence with data items representative of various measurements of the pressure, of the temperature, and of the density of the gas mixture containing said component.

4/ A method according to claim 1, in which the density is measured by means of a vibrating-blade sensor.

5/ A method according to claim 1, in which the density is measured by means of a capacitor whose capacitance is a function of the permittivity of the gas mixture.

6/ A method according to claim 1, in which the density is measured by means of an interferometer.

7/ A method according to claim 2, in which the data-processing unit is a microcomputer.

8/ A method according to claim 2, in which the data-processing unit is formed by microprocessors or microcontrollers.

9/ Electrical switchgear provided with an enclosure containing a mixture of at least two dielectric gases

under pressure, wherein the proportions of the dielectric gases in the mixture are determined by implementing a method according to claim 1.

10/ Electrical switchgear according to claim 9, in which the gas mixture is made up of two components constituted by N_2 and SF_6 or by CF_4 and SF_6.